

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

Claim 1 (Canceled).

Claim 2 (Currently Amended): The method according to claim 21, wherein ~~said step~~ of applying hydrogen peroxide to said packaging sheet material comprises applying liquid hydrogen peroxide thereto at an effective concentration of up to 50% by weight.

Claim 3 (Currently Amended): The method according to claim 21, wherein ~~said step~~ of applying hydrogen peroxide to said packaging sheet material comprises applying liquid hydrogen peroxide at a concentration of from 20% by weight to 40% by weight.

Claim 4 (Currently Amended): A method for sterilizing a packaging sheet material, the method comprising in the following order:

applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material ~~while any microorganisms on the surface of the packaging material absorb hydrogen peroxide~~;

applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and thereafter

irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein ~~said step of applying hydrogen peroxide to said packaging sheet material~~ comprises ~~the step of~~ immersing said packaging sheet material in a hydrogen peroxide bath at a temperature between 15 degrees Centigrade and 80 degrees Centigrade, for a time interval of from 0.5 seconds to 2 seconds.

Claim 5 (Currently Amended): A method for sterilizing a packaging sheet material, the method comprising in the following order:

applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein ~~said step of applying a stream of air to said packaging sheet material~~ removing a substantial amount of hydrogen peroxide from said packaging sheet material comprises ~~blowing a stream of heated air, stream of air is~~ heated to a temperature from 80 degrees Centigrade to 150 degrees Centigrade ~~onto said packaging sheet material; and~~ wherein said packaging sheet material is hydrophobic.

Claim 6 (Currently Amended): The method according to claim 21, wherein ~~said step of irradiating the surface of said packaging sheet material with UV light comprises irradiating said packaging sheet material with polychromatic UV light.~~

Claims 7-14 (Canceled).

Claim 15 (Currently Amended): An apparatus for sterilizing a packaging material comprising:

(a) a means for applying a hydrogen peroxide solution to a surface of a packaging material, connected in sequence to

(b) a means for directing a stream of air on the surface of said packaging material to remove substantially all but a residual or trace quantity of hydrogen peroxide, connected in sequence to

(c) a means for irradiating said packaging material with UV light having a UV wavelength between 200nm and 320nm, with respect to said advancement direction, and

(d) a means for advancing the packaging material continuously and sequentially from the applying means through the means for directing a stream of air and then to the irradiating means; and through the air stream directing means;

~~wherein a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging material is directly targeted with UV radiation; and~~

~~wherein said means for applying hydrogen peroxide includes a bath having a depth of less than 50cm.~~

Claim 16 (Canceled).

Claim 17 (Currently Amended): The apparatus according to claim 15 ~~claim 26~~, wherein said means for irradiating the packaging sheet material with light includes at least one lamp producing UV light ~~source~~ having a wavelength of about 222 nm ~~between about 200nm and 320nm~~.

Claim 18 (Currently Amended): The apparatus according to claim 15 ~~claim 26~~, wherein the UV light source includes at least one excimer lamp.

Claims 19-20 (Canceled).

Claim 21 (Currently Amended): A method for sterilizing a packaging sheet material, the method comprising, in the following order:

applying a liquid solution of hydrogen peroxide to the surface of a packaging material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide;

applying a stream of air to the packaging sheet material for removing the hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and

irradiating the surface of the packaging material with UV light having a wavelength between about 200nm and 320nm.

Claim 22 (Currently Amended): A method for rendering any microorganisms present on the surface of packaging sheet material non-viable, the method comprising, in the following order:

advancing continuously the sheet material through a bath of liquid hydrogen peroxide having a concentration of at least 10% by weight;

blowing air against a surface of the sheet material, the air being heated to a temperature of between 80 degrees Centigrade and 150 degrees Centigrade, for removing hydrogen peroxide from the surface of the sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on the sheet material; and

directing UV light onto the surface of the sheet material containing the hydrogen peroxide absorbed by or located adjacent to the microorganisms, whereby the synergy between hydrogen peroxide and the UV light kills the microorganisms.

Claim 23 (Currently Amended): A method for sterilizing packaging material comprising, in the following order:

applying a hydrogen peroxide solution on the surface of a packaging material while any microorganisms on the surface absorb hydrogen peroxide;

removing a substantial amount of hydrogen peroxide from the surface of said packaging material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging material;

irradiating said packaging material with UV light having a wavelength of between about 200 nm and 320 nm; and

~~advancing wherein~~ said packaging material is advanced continuously and at the same rate through an apparatus sequentially applying a hydrogen peroxide solution, removing a substantial amount of the hydrogen peroxide, and thereafter irradiating said packaging material ~~through the removing step and the irradiating step.~~

Claim 24 (Currently Amended): The method according to claim 23, wherein ~~the coating applying step includes~~ applying a hydrogen peroxide solution comprises passing the packaging material through a bath of hydrogen peroxide having a concentration of 20% to 40% by weight.

Claim 25 (Currently Amended). The method according to claim 23, wherein ~~the removing step includes~~ removing a substantial amount of hydrogen peroxide comprises applying a stream of air to the surface of the packaging material, the air stream having a temperature of between 80°C and 150°C.

Claim 26 (Currently Amended): An apparatus for sterilizing a packaging material comprising:

(a) a means for applying a hydrogen peroxide solution to a surface of a packaging material, connected in sequence to

(b) a means for directing a stream of air on the surface of said packaging material to substantially remove all but a residual or trace quantity of the hydrogen peroxide that has been absorbed by or located adjacent to any microorganisms present on said packaging material, connected in sequence to

(c) a means for irradiating said packaging material with UV light having a UV wavelength between 200 nm and 320 nm, with respect to said advancement direction, and

(d) means for advancing the packaging material continuously and sequentially from the means for applying a hydrogen peroxide solution, through the means for directing a stream of air, and thereafter through the means for irradiating said packaging material  
applying means to the irradiating means and through the air stream directing means;

wherein a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging material is directly targeted with UV radiation.

Claim 27 (Currently Amended): The apparatus according to claim 26, wherein said ~~irradiating means includes~~ means for irradiating said packaging material comprises an eximer lamp.

Claim 28 (Currently Amended): A method for sterilizing a packaging sheet material comprising, in the following order the following steps:

(1) applying a liquid solution of hydrogen peroxide to the surface of a packaging sheet material while any microorganisms on the surface of the packaging material absorb hydrogen peroxide; then

(2) applying a stream of air to said packaging sheet material for removing a substantial amount of hydrogen peroxide from the surface of the packaging sheet material while retaining a residual or trace quantity of hydrogen peroxide absorbed by or located adjacent to any microorganisms present on said packaging sheet material; and thereafter

(3) irradiating the surface of said packaging sheet material with UV light having a wavelength between about 200nm and 320nm;

wherein ~~said step of~~ applying hydrogen peroxide to said packaging sheet material comprises ~~the step of~~ immersing said packaging sheet material in a hydrogen peroxide bath at a temperature between 15 degrees Centigrade and 80 degrees Centigrade, for a time interval of from 0.5 seconds to 2 seconds;

wherein ~~said step of~~ removing a substantial amount of hydrogen peroxide from said packaging sheet material comprises blowing a stream of ~~heated~~ air[[,]] heated to a temperature from 80 degrees Centigrade to 150 degrees Centigrade onto said packaging sheet material; and

wherein said packaging sheet material is hydrophobic.

Claim 29. (New): An apparatus for sterilizing packaging material comprising a packaging material transport mechanism arranged to transport the packaging material in sequence through a bath of hydrogen peroxide solution, past an air knife capable of substantially removing the hydrogen peroxide solution from the packaging material and thereafter past a UV light source.

Claim 30. (New): The apparatus of claim 29 wherein the UV light source comprises at least one lamp that produces UV light having a wavelength between about 200 nm and 320 nm.

Claim 31. (New): The apparatus of claim 30 wherein the UV light source comprises at least one lamp that produces UV light having a wavelength of about 222 nm.



Claim 32 (New): The apparatus according to claim 31, wherein the UV light source includes at least one excimer lamp.